

Cooling Line Auto Cleaning System

LCD用



Semiconductor用



1. Cooling Line Cleaning Purpose

*** Cooling Line support**

Stable & uniform temperature in Chamber

Stable Gas/Chemical reaction

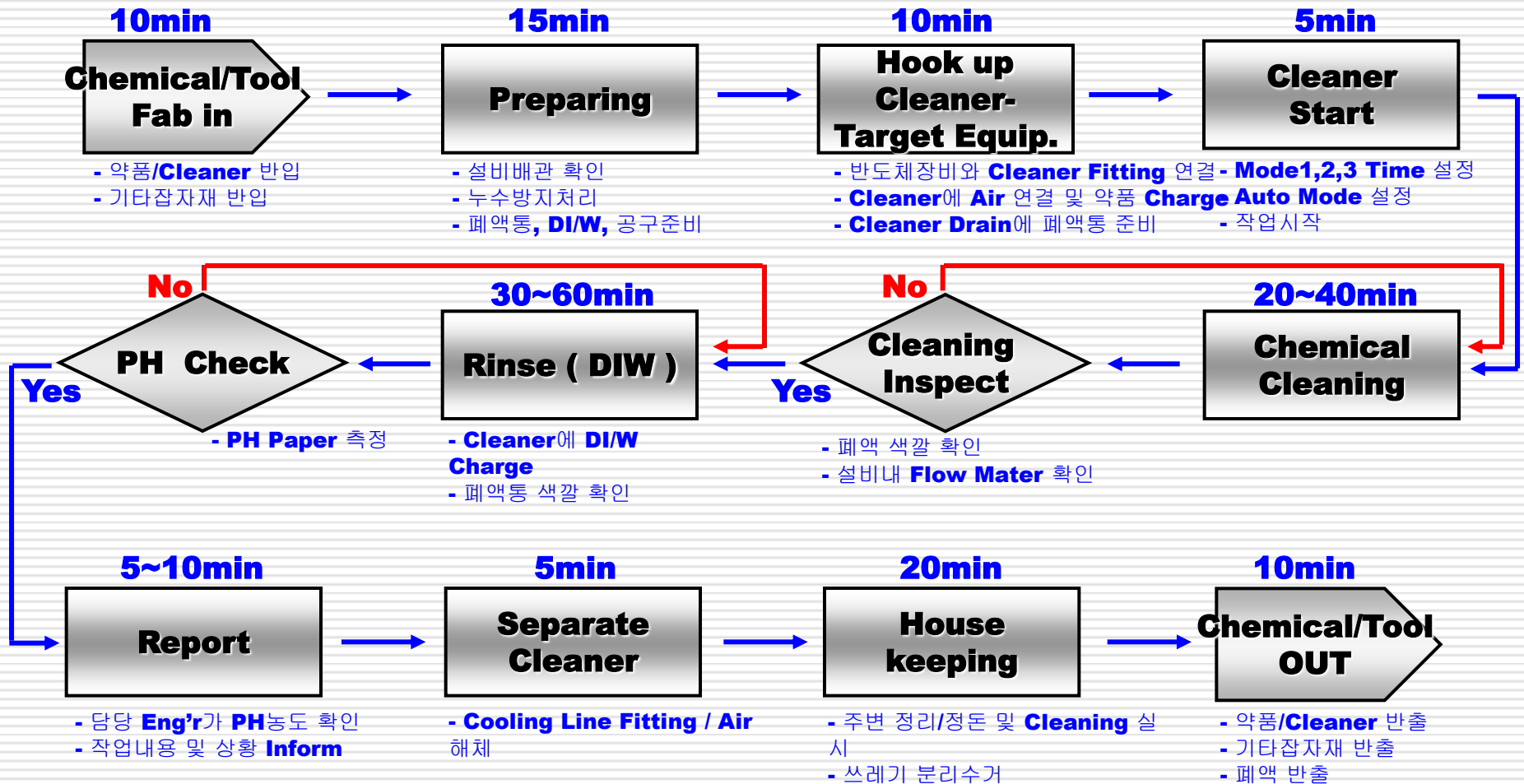
*** Cooling Line contamination**

Contamination on Electroless Plating by Metal Ion

Organic mass by long term Cooling Water

Remove the contamination to support clean cooling line.

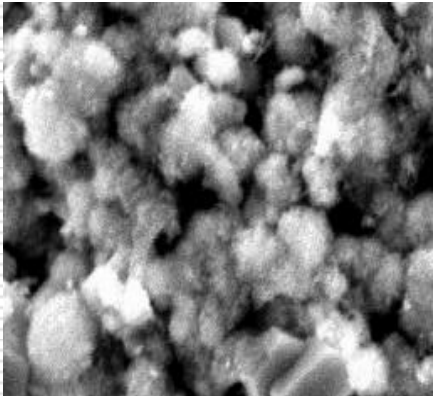
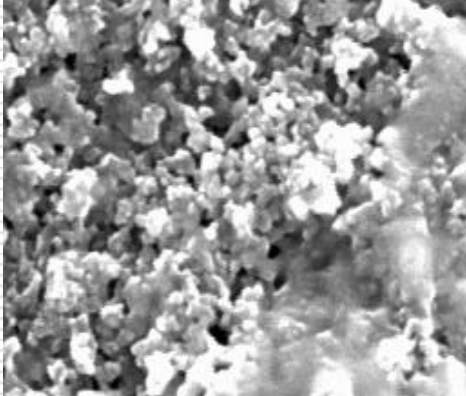
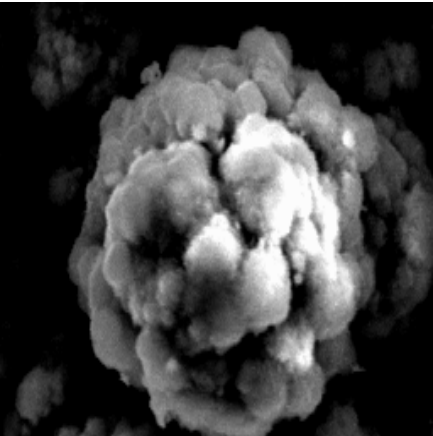
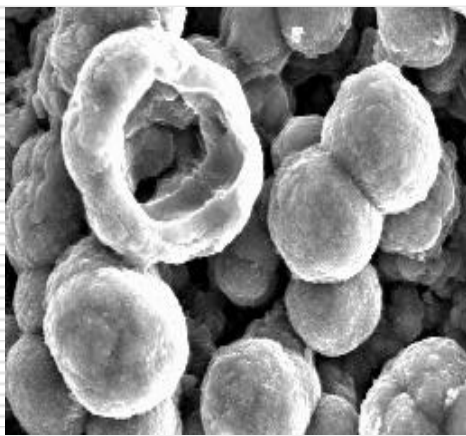
2. Cooling Line Overhaul Procedure Chart



※ **Cooling Line Overhaul need**

→ **2hr~2hr 50min (LCD needs 6hrs)**

2-1. Cooling Line Scale (X200)

Scale 형태		Scale 성분
		Cu, O
		
		Cu, Al, Fe, O

3. Cooling Line Before and After

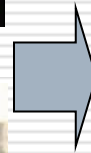
Cleaning Before



contamination



Cleaning

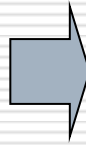


Cleaning After



* Cleaning Chemical Before/After

Before



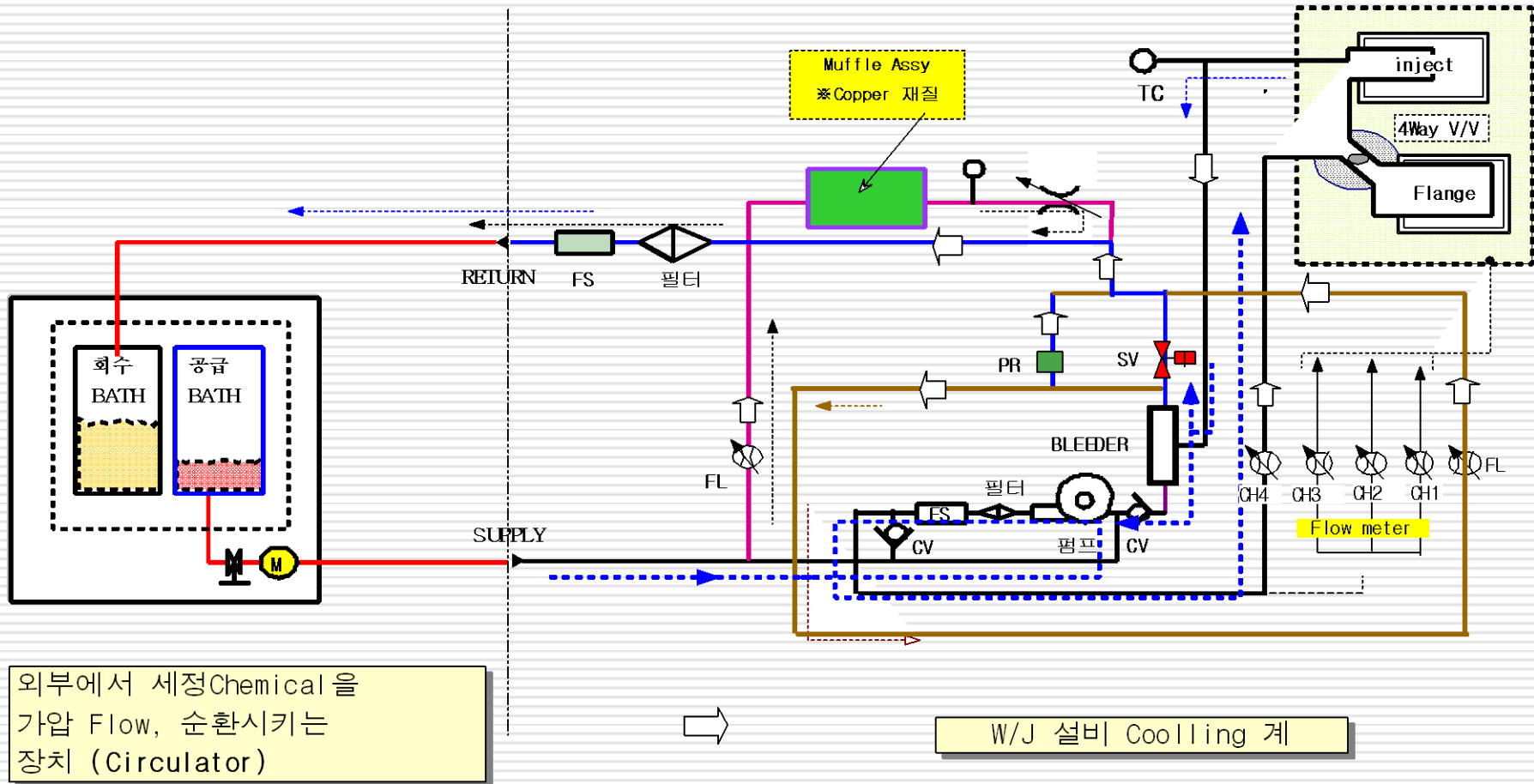
After



- Own developed Cleaning Chemical
 - Qualified and registered by Samsung
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4. Drawing of Cooling Line Cleaning

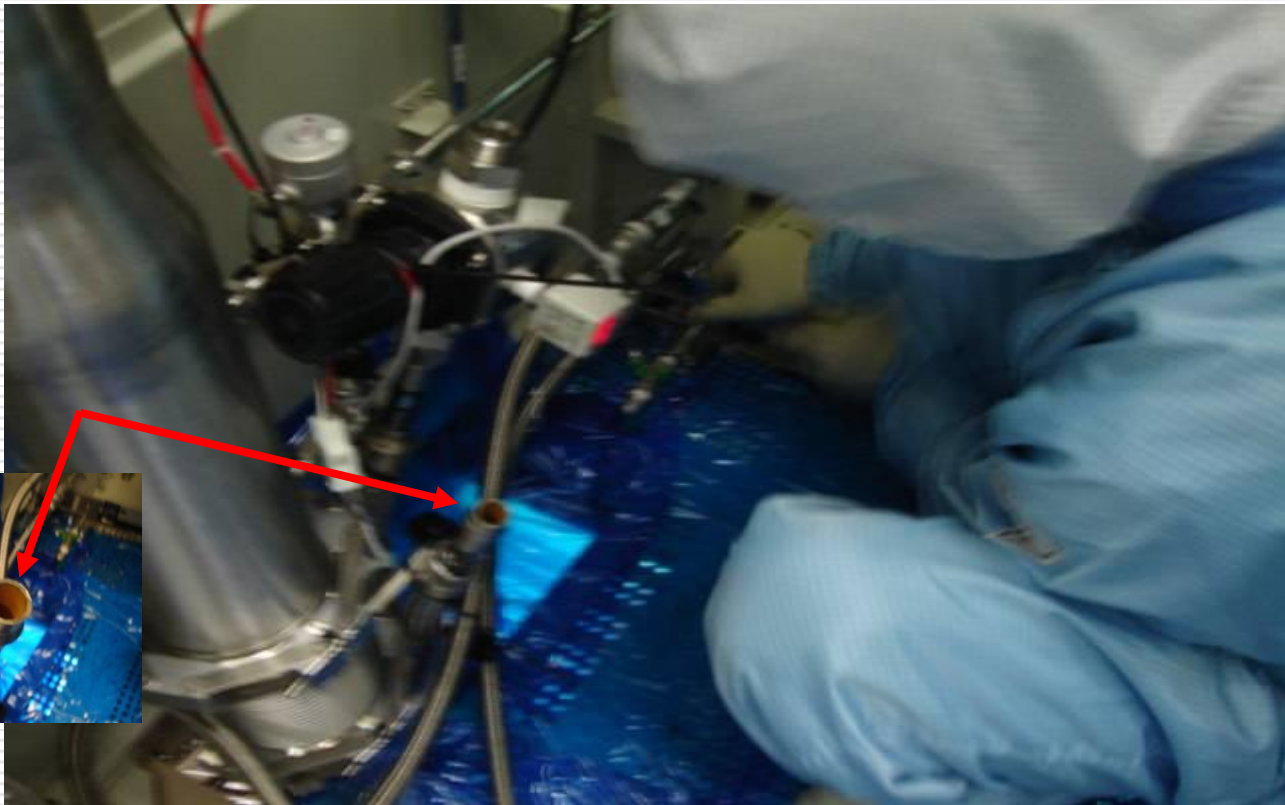
- Cooling Line & Cleaning System



*** Actual work in Fab**

※ Cooling Line Cleaning by Auto Cleaner (Photo of Open up PCW Line Inlet/Outlet)

Dirty Inlet



5. Cooling Line Cleaning Effect

- Cooling Line Temp. Control**

Recover initial condition of process tool due to best heat dissipation

- PCW supply pump Life time**

Extend Pump life time with low power, enough cooling water flow

- Extend Life Time of Equipment**

6. Cooling Line Cleaning Experience

Customer	Process	Maker (Equipment & Part)	Date	Remark
DongbuAnam	Sputter	Ulvac	2005.11	Coolong Line Cleaning
Samsung	Diffusion (12 Line)	Varian	2006.12	Coolong Line Cleaning
Samsung LCD	Sputter (1 Line)	Ulvac	2007.11~2008.01	Coolong Line Cleaning
Emerson Korea	Analyzer	PHSensor, Chamber...	2007~	Cleaning~Vacuum Packing
Emerson Korea	Flow meter	Mass,Vortex, Magnatic...	2008~	Cleaning~Vacuum Packing
